AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

Claim 1 (currently amended): A fuel-cell stack comprising a plurality of direct-alcohol fuel cells;

each cell having a structure comprising:

- a first electrode;
- a second electrode;
- an electrolyte arranged between the first electrode and the second electrode;
- means for conducting electrical current to the first electrode and the second electrode;

wherein the entire structure of each cell is miniaturized and is made of superimposed layers;

wherein the entire structure of each of the plurality of cells of the stack is associated in an irremovable way to ~~only~~ a single flexible substrate; ~~and~~

wherein a first~~at least one~~ duct is also associated in an irremovable way to the single flexible substrate, the duct being connected to the plurality of cells for supplying them with fuel, wherein the duct also connects the fuel cells to each other; and

wherein a second duct is also associated in an irremovable way to said single flexible substrate, said second duct being connected to the plurality of cells for emptying water from each cell.

Claim 2 (canceled).

Claim 3 (previously presented): The fuel-cell stack according to Claim 1, wherein the single flexible substrate is made of polymeric material.

Claim 4 (canceled).

Claim 5 (previously presented): The fuel-cell stack according to Claim 1, wherein associated to the single flexible substrate in an irremovable way are conducting paths, which electrically connect each cell to the next one.

Claim 6 (previously presented): The fuel-cell stack according to Claim 1, wherein the means for conducting electrical current comprise a first layer of metallic material resting on the single flexible substrate and wherein the first electrode comprises an anodic catalyst in contact with said first layer.

Claim 7 (previously presented): The fuel-cell stack according to Claim 1, wherein the means for conducting electrical current comprise a second layer of metallic material resting on the electrolyte and wherein the second electrode comprises a cathodic catalyst in contact with said second layer.

Claim 8 (previously presented): The fuel-cell stack according to Claim 7, wherein on said second layer there is present a protective layer.

Claim 9 (previously presented): The fuel-cell stack according to Claim 1, wherein the electrolyte is in the form of a membrane.

Claim 10 (previously presented): The fuel-cell stack according to Claim 1, wherein the electrolyte has a composite structure comprising zeolite.

Claim 11 (previously presented): The fuel-cell stack according to Claim 1, wherein the means for conducting electrical current to the first electrode and the second electrode are in the form of metallic layers.

Claim 12 (previously presented): The fuel-cell stack according to Claim 1, wherein at least one between the first electrode and the second electrode comprises a catalyst containing granules of carbon and a noble metal selected from the group consisting of platinum, palladium, rhodium, iridium, osmium and ruthenium.

Claim 13 (previously presented): The fuel-cell stack according to Claim 1, wherein at least one between the first electrode and the second electrode comprises a catalyst containing a material selected from the group consisting of fullerenes, carbon nanotubes, carbon nanofibres.

Claim 14 (previously presented): The fuel-cell stack according to Claim 1, wherein at least one between the first electrode and the second electrode comprises a catalyst deposited on zeolite material.

Claim 15 (previously presented): The fuel-cell stack according to Claim 1, wherein it comprises a first control part and a second energy generation part, the first part having a micro-pump, which is operative for regulating the supply of the fuel to the cells, the micro-pump comprising:

- a respective inlet branch, for connection to a source of the fuel; and
- a delivery branch, for connection to the delivery means.

Claim 16 (previously presented): The fuel-cell stack according to Claim 15, wherein the micro-pump is a piezoelectric micro-pump and made using MEMS (Micro Electro-Mechanical Systems) technology.

Claim 17 (previously presented): The fuel-cell stack according to Claim 15, wherein the micro-pump is operative for maintaining the cells moist in order to prevent deterioration of said miniaturized structure.

Claim 18 (previously presented): The fuel-cell stack according to Claim 15, wherein the first part comprises a microcontroller for the control of the micro-pump.

Claim 19 (previously presented): The fuel-cell stack according to Claim 15, wherein the first part comprises a supercapacitor provided for electrical connection to a cell.

Claim 20 (previously presented): The fuel-cell stack according to Claim 19, wherein the supercapacitor is operative for supplying the microcontroller with electrical energy.

Claim 21 (previously presented): The fuel-cell stack according to Claim 15, wherein the second part comprises the single flexible substrate with the respective cells, and the first part is distinct from the single flexible substrate and is provided for being connected electrically and hydraulically to one of the cells of the second part.

Claim 22 (previously presented): The fuel-cell stack according to Claim 1, wherein the single flexible substrate is in the form of a ribbon developing in length and capable of being rolled up.

Claim 23 (previously presented): The fuel-cell stack according to Claim 1, wherein the fuel is methanol in aqueous solution.

Claim 24 - 30. (canceled).

Claim 31 (previously presented): The fuel-cell stack according to Claim 3, wherein the polymeric material is an insulating polyamide material.

Claim 32 (previously presented): The fuel-cell stack according to Claim 8, wherein the protective layer is made of a polymeric material.

Claim 33 (previously presented): The fuel-cell stack according to claim 1, wherein the single flexible substrate has a length direction and the duct extends along the substrate in the length direction of the single flexible substrate.

Claim 34 (canceled).